

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

and,  $\bar{x}$  is the sample mean; n is the number of samples; and  $x_i$  is the  $i^{\text{th}}$  sample;

Or,

(ii) The upper 90 percent confidence limit (UCL) of the true mean divided by 1.1, where:

$$UCL = \bar{x} + t_{.90} \left( \frac{s}{\sqrt{n}} \right)$$

And  $\bar{x}$  is the sample mean; s is the sample standard deviation; n is the number of samples; and  $t_{0.90}$  is the t statistic for a 90% one-tailed confidence interval with n-1 degrees of freedom (from Appendix A).

(b) *Certification reports.* (1) The requirements of § 429.12 are applicable to urinals; and

(2) Pursuant to § 429.12(b)(13), a certification report shall include the following public product-specific information: The maximum water use in gallons per flush (gpf), rounded to the nearest 0.01 gallon, and for trough-type urinals, the maximum flow rate in gallons per minute (gpm), rounded to the nearest 0.01 gallon, and the length of the trough in inches (in).

[76 FR 12451, Mar. 7, 2011; 76 FR 24771, May 2, 2011, as amended at 78 FR 62986, Oct. 23, 2013]

**§ 429.32 Ceiling fans.**

(a) *Sampling plan for selection of units for testing.* The requirements of § 429.11 are applicable to ceiling fans.

(b) *Certification reports.* (1) The requirements of § 429.12 are applicable to ceiling fans; and

(2) Pursuant to § 429.12(b)(13), a certification report shall include the fol-

lowing public product-specific information: The number of speeds within the ceiling fan controls and a declaration that the manufacturer has incorporated the applicable design requirements.

**§ 429.33 Ceiling fan light kits.**

(a) *Sampling plan for selection of units for testing.* (1) The requirements of § 429.11 are applicable to ceiling fan light kits; and

(2) For each basic model of ceiling fan light kit with sockets for medium screw base lamps or pin-based fluorescent lamps selected for testing, a sample of sufficient size shall be randomly selected and tested to ensure that—

(i) Any value of estimated energy consumption or other measure of energy consumption of a basic model for which consumers would favor lower values shall be greater than or equal to the higher of:

(A) The mean of the sample, where:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

and,  $\bar{x}$  is the sample mean; n is the number of samples; and  $x_i$  is the  $i^{\text{th}}$  sample;

Or,

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(B) The upper 95 percent confidence limit (UCL) of the true mean divided by 1.1, where:

$$UCL = \bar{x} + t_{.95} \left( \frac{s}{\sqrt{n}} \right)$$

And  $\bar{x}$  is the sample mean; s is the sample standard deviation; n is the number of samples; and  $t_{0.95}$  is the t statistic for a 95% one-tailed confidence interval with n-1 degrees of freedom (from Appendix A).

and

(ii) Any represented value of the efficacy or other measure of energy consumption of a basic model for which

consumers would favor higher values shall be less than or equal to the lower of:

(A) The mean of the sample, where:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

and,  $\bar{x}$  is the sample mean; n is the number of samples; and  $x_i$  is the  $i^{th}$  sample;

Or,

(B) The lower 95 percent confidence limit (LCL) of the true mean divided by 0.9, where:

$$LCL = \bar{x} - t_{.95} \left( \frac{s}{\sqrt{n}} \right)$$

And  $\bar{x}$  is the sample mean; s is the sample standard deviation; n is the number of samples; and  $t_{0.95}$  is the t statistic for a 95% one-tailed confidence interval with n-1 degrees of freedom (from Appendix A).

(b) *Certification reports.* (1) The requirements of § 429.12 are applicable to ceiling fan light kits; and

(2) Pursuant to § 429.12(b)(13), a certification report shall include the following public product-specific information:

(i) Ceiling fan light kits with sockets for medium screw base lamps: the rated wattage in watts (W) and the system's efficacy in lumens per watt (lm/W).

(ii) Ceiling fan light kits with pin-based sockets for fluorescent lamps: the rated wattage in watts (W), the system's efficacy in lumens per watt

(lm/W), and the length of the lamp in inches (in).

(iii) Ceiling fan light kits with any other socket type: the rated wattage in watts (W) and the number of individual sockets.

(3) Pursuant to § 429.12(b)(13), a certification report shall include the following additional product-specific information: Ceiling fan light kits with any other socket type: a declaration that the basic model meets the applicable design requirement and the features that have been incorporated into

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the ceiling fan light kit to meet the applicable design requirement (e.g., circuit breaker, fuse, ballast).

[76 FR 12451, Mar. 7, 2011; 76 FR 24772, May 2, 2011]

**§ 429.34 Torchieres.**

(a) *Sampling plan for selection of units for testing.* (1) The requirements of § 429.11 are applicable to torchieres; and

(2) Reserved

(b) *Certification reports.* (1) The requirements of § 429.12 are applicable to torchieres; and

(2) Pursuant to § 429.12(b)(13), a certification report shall include the following additional product-specific information: A declaration that the basic model meets the applicable design requirement and the features that have been incorporated into the torchiere to meet the applicable design requirement (e.g., circuit breaker, fuse, ballast).

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**§ 429.35 Bare or covered (no reflector) medium base compact fluorescent lamps.**

(a) *Sampling plan for selection of units for testing.* (1) The requirements of § 429.11 are applicable to bare or covered (no reflector) medium base compact fluorescent lamps; and

(2) For each basic model of bare or covered (no reflector) medium base compact fluorescent lamp

(i) No less than five units per basic model must be used when testing for the efficacy, 1,000-hour lumen maintenance, and the lumen maintenance. Each unit must be tested in the base-up position unless the product is labeled restricted by the manufacturer, in which case the unit should be tested in the manufacturer specified position. Any represented value of efficacy, 1,000-hour lumen maintenance, and lumen maintenance shall be based on a sample randomly selected and tested to ensure that the represented value is less than or equal to the lower of:

(A) The mean of the sample, where:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

and,  $\bar{x}$  is the sample mean; n is the number of samples; and  $x_i$  is the  $i^{\text{th}}$  sample;

Or,

(B) The lower 97.5 percent confidence limit (LCL) of the true mean divided by 0.95, where:

$$LCL = \bar{x} - t_{0.975} \left( \frac{s}{\sqrt{n}} \right)$$

And  $\bar{x}$  is the sample mean; s is the sample standard deviation; n is the number of

samples; and  $t_{0.975}$  is the t statistic for a 97.5% one-tailed confidence interval with n-1

degrees of freedom (from Appendix A).

(ii) No less than 6 unique units (i.e., units that have not previously been tested) per basic model must be used when testing for the rapid cycle stress. Each unit can be tested in the base up

or base down position as stated by the manufacturer.

(iii) No less than 10 units per basic model must be used when testing for the average rated lamp life. Half the sample should be tested in the base up